Supplier Name: **Texas Instruments Inc. (DUNS# 00-732-1904)**
Contact Info: ti.com/support
Form/Declaration Type: **Distribute - RoHS and IEC 62474 DB**
Created on: **06/01/2022**

**Details for "LM431CIM3/NOPB"**

### Current Product Information

| TI part number | Lead finish/Ball material | MSL rating/peak reflow | Assembly site | Package \| Pins | Package body size (mm) | Total device mass (mg)* |
|---|---|---|---|---|---|---|
| LM431CIM3/NOPB | SN | Level-1-260C-UNLIM | Texas Instruments Electronics | DBZ \| 3 | 2.9 x 1.3 x 0.95 | 9.8 |

***Total Device Mass**
The summary mass is a rounded value and will be within approximately +/- 10% of the detailed mass value.

### Environmental Ratings Information

| RoHS | REACH | Green | IEC 62474 DB |
|---|---|---|---|
| Yes | Yes | Yes | Yes |

### Component Information

| | | | | Homogeneous Material Level | | Component Level | |
|---|---|---|---|---|---|---|---|
| **Component** | **Substance** | **CAS Number** | **Amount (mg)** | **Percentage %** | **ppm** | **Percentage %** | **ppm** |
| **Bond Wire** | | | | | | | |
| Copper and Its Alloys | Copper | 7440-50-8 | 0.010887 | 100 | 1000000 | 0.111145 | 1111 |
| Sub-Total | | | **0.010887** | **100** | **1000000** | **0.111145** | **1111** |
| **Die Attach Adhesive** | | | | | | | |
| Precious Metals | Silver | 7440-22-4 | 0.093992 | 74.999801 | 749998 | 0.959563 | 9596 |
| Thermoplastics | Epoxy | 85954-11-6 | 0.031331 | 25.000199 | 250002 | 0.319858 | 3199 |
| Sub-Total | | | **0.125323** | **100** | **1000000** | **1.279421** | **12794** |
| **Lead Frame** | | | | | | | |
| Copper and Its Alloys | Copper | 7440-50-8 | 3.618134 | 95.870005 | 958700 | 36.937484 | 369375 |
| Copper and Its Alloys | Iron | 7439-89-6 | 0.089066 | 2.359989 | 23600 | 0.909274 | 9093 |
| Copper and Its Alloys | Phosphorus | 7723-14-0 | 0.001132 | 0.029995 | 300 | 0.011557 | 116 |
| Precious Metals | Silver | 7440-22-4 | 0.061139 | 1.620005 | 16200 | 0.624167 | 6242 |
| Zinc and Its Alloys | Zinc | 7440-66-6 | 0.004529 | 0.120005 | 1200 | 0.046237 | 462 |
| Sub-Total | | | **3.774** | **100** | **1000000** | **38.528718** | **385287** |
| **Lead Frame Plating** | | | | | | | |
| Other Nonferrous Metals and Alloys | Tin | 7440-31-5 | 0.24 | 100 | 1000000 | 2.450157 | 24502 |
| Sub-Total | | | **0.24** | **100** | **1000000** | **2.450157** | **24502** |
| **Mold Compound** | | | | | | | |
| Other Inorganic Materials | Silica | 7631-86-9 | 4.631421 | 88.700003 | 887000 | 47.282117 | 472821 |
| Other Nonferrous Metals and Alloys | Metal Hydroxide | Trade Secret | 0.156643 | 2.999994 | 30000 | 1.599166 | 15992 |
| Other Plastics and Rubber | Carbon Black | 1333-86-4 | 0.015664 | 0.299994 | 3000 | 0.159914 | 1599 |
| Thermoplastics | Epoxy | 85954-11-6 | 0.417716 | 8.000009 | 80000 | 4.264457 | 42645 |
| Sub-Total | | | **5.221444** | **100** | **1000000** | **53.305655** | **533057** |
| **Semiconductor Device** | | | | | | | |
| Ceramics / Glass | Doped Silicon | 7440-21-3 | 0.423637 | 100 | 1000000 | 4.324905 | 43249 |
| Sub-Total | | | **0.423637** | **100** | **1000000** | **4.324905** | **43249** |
| **Total** | | | 9.795291 | | | 100 | 1000000 |

**Important Note**
The ppm calculations are at the **homogeneous material** level and are maximum concentration values. The ppm displayed represents the **homogeneous material** with the highest ppm for that substance. The amount (mg) calculations represent the maximum total amount of each substance within the component.
The ppm calculations are at the **component** level and are average concentration values. The amount (mg) calculations represent the average total amount of each substance within the **component**.
See Glossary of Terms for more details.

**Important Part Information**
There is a remote possibility the Customer Part Number (CPN) your company uses could reference more than one TI part number. This is due to two or more users (EMSIs or subcontractors) using the same CPN for different TI part numbers. If this occurs, please check your Customer Part Number and cross reference it with the TI part number seen on this page.

**Product Content Methodology**
For an explanation of the methods used to determine material weights, See Product Content Methodology

### Material Declaration Certificate for Semiconductor IC Packaged Products

TI certifies that the material content information provided by TI is representative and accurate to the best of their knowledge based on material information provided by its suppliers and their combination into finished IC packaged products. TI semiconductor products designated to be "Pb-free", "Green" or "RoHS Exempt" fully meets the latest EU RoHS Directive requirements along with other legislation as seen in the former JIG-101 list that has been transferred to the IEC 62474 database.

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For additional information, please contact TI customer support.

Signature: (click here for a fuller statement with a signed certificate)

Name/Title: Hubie Payne, Vice President, Worldwide SC Quality
For further environmental statements, please go to www.ti.com/ecoinfo
Created on: 06/01/2022

**RoHS: Means TI semiconductor products that are compliant with the current RoHS requirement that the maximum concentration values of the ten substances listed in RoHS Annex II do not exceed 0.1 % by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI semiconductor products labeled as "RoHS Compliant" are suitable for use in specified lead-free processes. TI may also reference these types of semiconductor products as "Pb-Free." These TI semiconductor products are also fully compliant with GADSL and the IEC 62474 database for electronic requirements.**

**RoHS Exempt: Means TI semiconductor products that contain lead (Pb) above the RoHS Annex II threshold, but that fall within one of the specific RoHS exemptions noted above or documented in http://www.ti.com/lit/pdf/szzq088**

**Green: Means the content of Chlorine (Cl) and Bromine (Br)-based flame retardants meet JS709B low halogen requirements of <=1 000ppm threshold; Antimony trioxide (Sb203) contained in halogen based flame retardant materials meets the <=1 000ppm threshold requirement; and Beryllium Oxide (BeO) is <=1000ppm.**